

**REMARKS**

Claims 1-12 are pending. Claims 1-12 stand rejected. Claims 1 and 6 are independent claims.

Applicant wishes to thank the Examiner for indicating that claims 5, 10, and 12 are allowable if the claims overcome the rejection under 35 U.S.C. 112, second paragraph, and if rewritten in an independent form incorporating all features of the base and any intervening claims. Applicant, at this time, wishes to defer amending claims 5, 10, and 12. Instead, applicant wishes to amend claims 1 and 6 to distinguish over the prior arts.

Claims 1 and 6 stand rejected under 35 U.S.C. 112, second paragraph, for allegedly reciting a feature that is broad in range together with a feature that is narrow in range. Claims 1 and 6 recite, *inter alia*, that generated amplified spontaneous emission has a predetermined peak value in the range of C-band (Page 5, line 10-15). Applicant submits that such claims do not recite a feature that is broad in range together with a feature that is narrow in range. Accordingly, claims 1 and 6 comply with the requirements of 35 U.S.C. 112, second paragraph, and applicant respectfully requests removal of this rejection.

Claim 1 stands rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Cowle *et al.* (U.S. 6,441,953 B1) (“Cowle”).

Claim 1, as amended, recite, *inter alia*, “a first pumping unit configured to output an amplified spontaneous emission including an amplified filtered amplified spontaneous emission that represents a peak value in a predetermined wavelength range belonging to C-band to pump

the thulium-doped fiber.” As noted in the specification, the first pumping unit outputs a high-power amplified spontaneous emission (“ASE”) which includes a filtered ASE that is amplified in an erbium-doped fiber after it is filtered (Page 6, line 20 – page 7, line 1).

Cowle, as read by applicant, discloses a dual stage L-band amplifier that minimizes generation of ASE or noise and that maximizes output power. However, nowhere does Cowle provides a pumping unit configured to output a high-power ASE including an amplified filtered ASE, as disclosed in claim 1. On the contrary, Cowle provides a 1050/1560 nm or 1400/1560 nm laser diode pumping source, the type of a pumping source which replaces present high-power ASE including an amplified filtered ASE. As such, applicant submits that Cowle fails to teach all features of claim 1 and fails to anticipate claim 1, as amended. Applicant respectfully requests withdrawal of this rejection on claim 1.

Claim 6 stands rejected under 35 U.S.C. §103(a) as allegedly being obvious over Cowle in view of Zirngibl (U.S. 5,128,800).

Claim 6, as amended, recites features that are similar to those in claim 1 and described above. As such, applicant submits that claim 6 also recites features that are not taught in Cowle.

Zirngibl, as ready by applicant, discloses an optical amplifier with a switchable gain that includes a feedback loop between the input and output port of the amplifier. However, nowhere does Zirngibl provides a pumping unit configured to output a high-power ASE including an amplified filtered ASE, as disclosed in claim 6. Instead, Zirngibl provides a 1480 nm laser diode pump source, the type of a pumping source which replaces present high-power ASE including an amplified filtered ASE. As such, Zirngibl also fails to teach all features of claim 6.

Accordingly, Cowle and Zirngibl, alone or in combination, fail to teach all features of claim 6. As such, applicant submits that two references, alone or in combination, fail to render claim 6 obvious.

Non-obviousness of the present invention, as disclosed in claim 6, is further supported by present invention's results that are unexpected from the teachings of Cowle and Zirngibl, alone or in combination. According to the Court of Customs and Patent Appeals, presence of a property not possessed by the prior art demonstrate non-obviousness of the invention (*In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963)).

As noted above, generating a high power ASE including an amplified filtered ASE capable of pumping the thulium doped fiber, as taught in claim 6, is not expected from either Cowle or Zirngibl. Moreover, the ability to replace a 1050/1560 nm or 1400/1560 nm laser diode or DFB laser diode pumping source with a high-power ASE including a filtered ASE, as taught in claim 6, is not expected from Cowle or Zirngibl. Present invention, as described in claim 6, therefore, achieves results that are not expected from Cowle or Zirngibl, results that evince non-obviousness over Cowle and Zirngibl.

Even if Cowle and Zirngibl, alone or in combination, show all features of claim 6 or even if evidence of non-obviousness, as shown by unexpected result of present invention, is undermined, claim 6 is nevertheless unobvious over two references, for Cowle and Zirngibl cannot be combined to serve as a basis for rejecting claim 6.

Applicant respectfully submits that to establish *prima facie* case of obviousness, the Office Action must establish (1) some suggestion or motivation, either in the reference

themselves or in the knowledge of generally available to one of ordinary skill in the art, to combine the references; (2) there must be a reasonable expectation of success; and (3) the combined references must teach all features of the claim (MPEP 2143). To establish existence of some suggestion or motivation to combine two references, the Office Action must establish that **the prior arts suggest the desirability of the claimed invention** (MPEP 2143.01 (emphasis added)); see also *In re Fine*, 837 F.2d 1071, 5 USPQ.2d 1596 (Fed. Cir. 1988)).

The Office Action, however, does not meet this requirement. Nothing found in Cowle, Zirngibl, or general knowledge suggests desirability of achieving a high-power ASE including an amplified filtered ASE. Instead, Cowle disclose **desirability of obtaining low ASE or noise and high output gain in an amplifier** (Column 2, line 43-47); meanwhile, Zirngibl suggests desirability of **obtaining a stable operation state in an amplifier** (Column 1, line 62-65). Applicant submits that desirability of Cowle and Zirngibl do not correspond to one another or to that of the present invention. As such, applicant submits that no motivation exists to combine two references or to show reasons that the skilled artisan would select the elements from the cited prior art references for combination in the manner claimed (See *In Re Denis Rouffet*).

In fact, applicant submits that a suggestion or motivation against combining Cowle and Zirngibl exists, as Cowle and Zirngibl teach away from combining with one another. The Federal Circuit has held that when a prior art teaches against combining with another prior art, the combination is improper and a rejection based on such a combination is also improper (See *In re Graselli*, 713 F.2d 731, 218 USPQ 769 (Fed. Cir. 1983); see also MPEP 2145(X)(D)(2)).

Zirngibl discloses that its amplifier unavoidably suffers from decreases in the output signal gain due to implementation of a loop that achieves stabilization of signal gain (M. Zirngibl, *Gain Control in Erbium-Doped Fiber Amplifiers by an All-Optical Feedback Loop*,

Electronic Letter, Vol. 27, No. 7, 560-561, 561 (2nd to last paragraph) (March 1991) (disclosing an amplifier similar to the one disclosed in U.S. 5,128,800)). Meanwhile, Cowle discloses that its amplifier is designed to maximize output power of the signal gain (Column 2, line 43-47; column 4, line 7-9). Applicant submits that an amplifier designed to maximize output gain of a signal teaches away from implementing features, such as the loop disclosed in Zirngibl, that may decrease output signal gain. As such, applicant submits that the combination of Cowle and Zirngibl is improper and a rejection based on such improper combination is also improper.

Further, with absence of any suggestion or motivation to combine Cowle and Zirngibl, the Office Action appears to improperly rely on the present inventions as the motivation to combine the references. In particular, the Office Action appears to be using the claimed invention as a blueprint to locate Cowle disclosing a multiple amplifying units and Zirngibl disclosing a loop and to take those features out of context in attempt to piece together various features. The Board of Patent Appeals and Interference has specifically rejected this approach in *Ex parte Clapp*, 227 USPQ 972 (B.P.A.I. 1985). The Board held that

In the instant application, the examiner has done little more than cite references to show that one or more elements or subcombinations thereof, when each is viewed in a vacuum, is known. The claimed invention, however, is clearly directed to a combination of elements. That is to say, appellant does not claim that he has invented one or more new elements but has presented claims to a new combination of elements. To support the conclusion that the claimed combination is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed combination or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references

(Id. at 973)

As noted above, nothing in Cowle, Zirngibl, or general knowledge provides a motivation or suggestion to combine two references. Accordingly, applicants respectfully submit that there would have been no motivation for one of ordinary skill to attempt incorporating a loop of Zirngibl into the amplifier of Cowle, as indicated in the Office Action, without improper hindsight by “use[ing] the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention” (See *In Re Denis Rouffet*, at 1457-58). Applicant submits that a rejection based on such improper reliance on present invention is also improper, and applicant respectfully requests withdrawal of the rejection.

For all foregoing reasons, applicant respectfully submits that Cowle cannot be combined with Zirngibl to serve as a basis for rejecting claim 6. Moreover, even if two references are combined, Cowle and Zirngibl, alone or in combination, fail to teach all features of claim 6. Accordingly, applicant submits that claim 6 is not obvious over Cowle and Zirngibl, alone or in combination, and applicant respectfully requests withdrawal of this rejection.

Other claims in this application are each dependent on the independent claims 1 and 6, and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual consideration of the patentability of each on its own merits is respectfully requested.

Applicants submit that the claims, as they now stand, fully satisfy the requirements of 35 U.S.C. 112, 102, and 103. In view of the foregoing amendments and remarks, favorable reconsideration and early passage to issue of the present application are respectfully solicited.

Amendment  
Serial No. 10/632,376

Should the Examiner deem that there are any issues which may be best resolved by telephone, please contact Applicant's undersigned representative at the number listed below.

Respectfully submitted,

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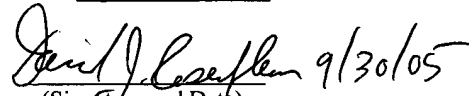
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 9/30/05  
(Signature and Date)